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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|-------------------------|---------------------|------------------|
| 10/798,073 | 03/11/2004 | Christopher A. Gonzales | ITL.1108US (P18748) | 5320 |
| 21206 | 7520 | 05/03/2005 | EXAMINER | |
| TROP PRUNER & HU, PC 8554 KATY FREEWAY SUITE 100 HOUSTON, TX 77024 | | | WALBERG, TERESA J | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 3753 | |

DATE MAILED: 05/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

②

| | | | |
|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/798,073 | Applicant(s) GONZALES ET AL. | |
| | Examiner Teresa J. Walberg | Art Unit 3753 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.

- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 23 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 23 and 28 both refer to "said base", however claim 22 from which they depend does not recite a base. It is unclear whether claims 23 and 28 were intended to depend from one of the other claims that recite a base, or whether the use of "said" was inadvertent. It has been assumed for purposes of this action that the dependency of claims 23 and 28 is as intended and that "said" should be read as "a". If this is not what application intended, clarification is required.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1, 2, 4, 5, 8, 11, 12, 14, 15, 18, 20, 22, 24, 25, and 28 are rejected under 35 U.S.C. 102(a) as being anticipated by Ellsworth (2003/0221816).

Ellsworth discloses the claimed structure and method including forming a heat transfer fin (see abstract) of a laminate of two different materials, the materials being a graphite and a metallic layer (para. 0018, lines 1-2), the materials being adhesively bonded (para. 0035, lines 10-16), and the fin being

Art Unit: 3753

permanently secured to a heat conductive base (para. 0036) and used to cool an integrated circuit (para. 0003).

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 6, 7, 9, 16, 17, 19, 26, 27, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellsworth (2003/0221816) in view of Moresco et al (6,223,814).

Ellsworth discloses the claimed structure and method with the exception of the aspect ratio of the fin being higher than 20:1, or being 60:1 and the metallic and non-metallic material having equal thickness. However, Moresco et al teach that it is known to use cooling fins with an aspect ratio of 20:1 and to use metallic and non-metallic material having equal thickness. It would have been obvious in view of Moresco et al to use fins with an aspect ratio of 20:1 in the heat sink of Ellsworth to increase the surface area of the fins and thus increase their heat transfer and to use metallic and non-metallic layers of equal thickness to increase the strength and heat conductance of the fins.

While Moresco et al do not specify a fins aspect ration of higher than 20:1, at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to use a fin aspect ration of higher than 20:1 or of 60:1 in the cooling fins of Moresco et al because Applicant

Art Unit: 3753

has not disclosed that using a fin aspect ratio of higher than 20:1 or of 60:1 provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected the cooling fins of Moresco et al, and applicant's invention, to perform equally well with either the aspect ratio taught by Moresco et al or the claimed higher than 20:1 or 60:1 aspect ratio because both aspect ratios would perform the same function of transferring heat equally well considering the typical power of an integrated circuit chip.

Therefore, it would have been prima facie obvious to modify Ellsworth in view of Moresco et al to obtain the invention as specified because such a modification would have been considered a mere design consideration which fails to patentably distinguish over the prior art of Ellsworth in view of Moresco et al.

7. Claims 3, 13, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellsworth (2003/0221816) in view of Kawabata et al (2002/0070005).

Ellsworth discloses the claimed structure and method with the exception of the fin being crimped to the base. However, Kawabata et al teach that it is known to use crimping to secure a fin to a base in a heat sink. It would have been obvious in view of Kawabata et al to crimp the fins to the base in the heat sink of Ellsworth to ensure that the fins and base were securely fastened together.

Art Unit: 3753

8. Claims 9, 19, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellsworth (2003/0221816) in view of Noda et al (2002/0070005).

Ellsworth discloses the claimed structure and method with the exception of the fin being secured to a microprocessor. However, Noda et al teach that it is known to use a heat sink with fins to cool a microprocessor (CPU 16). It would have been obvious in view of Noda et al to use the heat sink of Ellsworth to cool a microprocessor since high levels of cooling are needed for microprocessor operation.

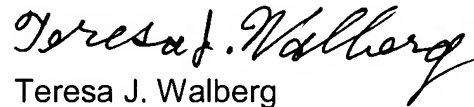
9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tsutsui is cited to show laminated fins. Martin, Zweben et al, Getz, Jr. et al, and Krassowski et al are cited to show heat dissipation devices using graphite.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Teresa J. Walberg whose telephone number is 571-272-4790. The examiner can normally be reached on M-F 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Mancene can be reached on 571-272-4930. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3753

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Teresa J. Walberg
Primary Examiner
Art Unit 3753

tjw